

First named inventor: Kwasny
Serial no. 10/644,423
Filed 8/20/2003
Attorney docket no. 200207936-1

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REMARKS

Claim objections

Claim 34 has been objected to because the phrase "a plurality of motor mechanisms that is" should read "a plurality of motor mechanisms that are." Applicant has amended claim 34 to make this correction, and requests that the objection be withdrawn.

Claims 1-18

Claims 1-2, 8-10, and 18 have been rejected under 35 USC 102(e) as being anticipated by Morishima (2004/0037176). Claims 3-7 and 11-14 have been rejected under 35 USC 103(a) as being unpatentable over Morishima in view of Onodera (2001/0040867). Claims 15 and 16 have been rejected under 35 USC 103(a) as being unpatentable over Morishima in view of Pettigrew (2004/0141385). Claim 17 has been objected to as containing allowable subject matter, but depending from a rejected base claim.

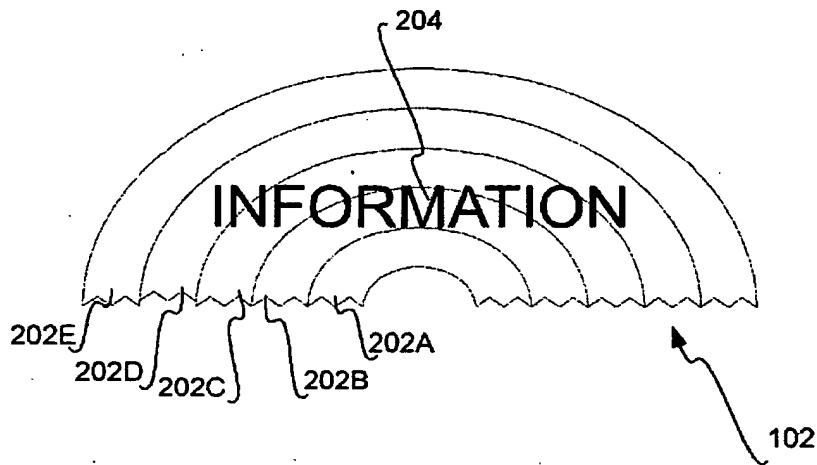
Claim 1 is an independent claim, from which claims 2-18 ultimately depend. Applicant contends that claim 1 is patentable over Morishima, such that claims 2-18 are patentable for at least the same reasons.

Claim 1 is limited to "formatting . . . information so that the information is optically written *on a least number of tracks* of the optically writable label side of the optical disc to minimize optical writing time." Applicant asserts that the italicized limitation – that the information is formatted so that it is optically written *on a least number of tracks* – is not disclosed, taught, or suggested by Morishima, as reasonably interpreted by one of ordinary skill within the art.

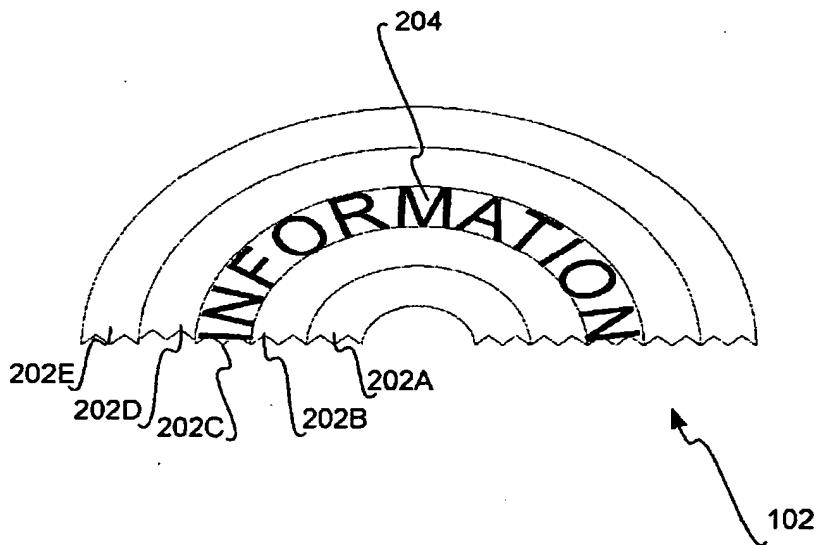
We will start by explaining by example what claim 1 means when it says that information is formatted so that it is written on a least number of tracks of the label side of an optical disc. Consider FIG. 2 from the patent application as filed, as reproduced below.

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Here the information 204 is formatted so that when written on the optical disc 102, it extends over three tracks: the tracks 202B, 202C, and 202D. However, if formatted in accordance with claim 1, so that the information 204 is formatted to be written on a "least number of tracks" on the optical disc 102, you get what is shown in FIG. 3 of the patent application as filed, as reproduced below.



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Here, the information 204 is formatted so that when written on the optical disc 102, it extends over just one track, the track 202C. Thus, by following an embodiment of the invention, the information 204 can be formatted so that it is written on a least number of tracks, such as on one track in the example above, instead of on three tracks.

The Examiner has relied upon paragraphs [0192] and [0210] of Morishima as disclosing the aspect of the claimed invention in which information is formatted so that it is optically written to a least number of tracks on the label side of the optical disc. We will consider both of these paragraphs in turn. First, paragraph [0192] recites the following.

The embodiment described above has been configured such that, when the high contrast mode has been set, gradation is converted into the ON data or the OFF data according to the number of rounds by using the conversion table in FIG. 12, the converted data being continuous among adjoining rounds. Therefore, *if gradation data of a certain value or more does not exist throughout one line in a certain round, then the irradiation of a laser beam from that round and after is skipped*, thus making it possible to shorten the time required for forming an image accordingly.

Applicant believes that the Examiner has cited this paragraph of Morishima because the claimed invention recites “minimiz[ing] optical writing time of the information to the optically writable label side of the optical disc,” whereas this excerpt of Morishima “mak[es] it possible to shorten the time required for forming an image.” However, there is a difference: claim 1 is limited to “formatting the information so that it is optically written *on a least number of tracks*.” This limitation is not met by paragraph [0192] of Morishima. Rather, Morishima minimizes writing time in a different way, as is now discussed in detail – and not by formatting the information so that it can be written on a least number of tracks.

Specifically, what Morishima is doing in paragraph [0192] is minimizing the number of passes, or “rounds” over a given dot in a given line, not formatting the information so that it is optically written on a least number of tracks. If the highest gradation value of any dot in a given line is (001) = 1, then you have to have one round of the laser over the line, but then can skip the remaining six rounds, since the laser does not have to irradiate any dot more than one time (viz.,

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round) to achieve the desired gradation level. If the highest gradation value of any dot in a given line is (010) = 2, then you have to have two rounds of the laser over the line, but can skip the remaining five rounds, since the laser does not have to irradiate. Similarly, if the highest gradation value is (011) = 3, then you have to have three rounds, but can skip the remaining four rounds, whereas if the highest value is (100) = 4, then you have to have four rounds, but can skip the remaining three rounds. You can see the pattern here: what Morishima is saying in paragraph [0192] is that you can minimize writing time of an image by, for a given line, skipping X rounds, where X is equal to 7 minus the highest gradation level of any dot in the line.

Therefore, what Morishima discloses in paragraph [0192] is different than the claimed invention. The claimed invention minimizes writing time by formatting information so that the information is written on the least number of tracks. By comparison, in paragraph [0192] Morishima minimizes writing time by passing over a given line (i.e., track) the least number of times necessary to write information to that line. Morishima is not concerned in paragraph [0192] with formatting the information so that it can be written to the least number of lines. It should be clear, then, that Morishima in paragraph [0192] does not anticipate the aspect of the claimed invention that information is formatted to be written on the least number of tracks.

Now, let us consider paragraph [0210] of Morishima, which the Examiner also relies upon as disclosing the limitation of the claimed invention that information is formatted so that it is written on the least number of tracks. Paragraph [0210] recites the following in relevant part.

[T]he number of the basic gradations indicated by gradation data may be reduced to form an image. For instance, the number of irradiations of the write level laser beam per line may be set to 0 if the gradation data is (000), (001), or one if the gradation data is (010), (011), or two if the gradation data is (100), (101), or three if the gradation data is (110), (111), carrying out three rounds per line and reducing the number of gradations to four to form the image. The irradiation trajectory of the laser beam is of course set to that it strides over the groove 2002a in all three rounds and differs in each round. Thus, by reducing the original number of gradations indicated by the gradation data in forming an image, the time required for forming the image itself can also be shortened . . .

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Applicant believes that the Examiner has cited this paragraph of Morishima because the claimed invention again recites “minimiz[ing] optical writing time of the information to the optically writable label side of the optical disc,” whereas this excerpt of Morishima provides that “the time required for forming the image itself can . . . be shortened.” However, there is a difference here: claim 1 is limited to formatting the information so that it is optically written “on a least number of tracks.” This limitation is not met by paragraph [0210]. Rather, Morishima minimizes writing time in a different way, as is now discussed in detail, and not by formatting the information so that it can be written on a least number of tracks.

Specifically, what Morishima is doing in paragraph [0210] is minimizing the levels of grayscale, or gradations, that a given dot in a given line can achieve, not formatting the information so that it is optically written on a least number of tracks. For instance, whereas before you may have had to make up to seven rounds over a given line to write dots to that line in accordance with Morishima, if you reduce the number of gradation levels from eight to four, then you only have to make at most up to three rounds over a given line to write dots to that line. In the best case, this reduces the writing time by almost half. For example, if you envision an optical disc in which all the dots on all the lines (viz., tracks) of the optical disc art have maximum gradation values of $(111) = 7$, if you do not perform the shortcut of paragraph [0210], each dot of each line has to be passed over seven rounds. However, if you perform the shortcut of paragraph [0210], then each dot of each line has to be passed over just three rounds, since the gradation value of $(111) = 7$ is reduced to 3.

Therefore, what Morishima discloses in paragraph [0210] is different than the claimed invention. The claimed invention minimizes writing time by formatting information so that it is written on the least number of tracks. In the example provided at the beginning of the remarks section of this office action response, for instance, it is shown how information can be formatted so that instead of being written to three tracks, it is written to one track. However, Morishima does not format information in paragraph [0210] so that it is written to the least number of tracks.

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Rather, Morishima minimizes writing time in paragraph [0210] by reducing the maximum number of rounds the laser has to pass over each line (viz., track), by correspondingly reducing the effective number of gradation levels any given dot can have. Thus, whereas before there may have been eight gradation levels, such that the laser may have to had to pass over each line a maximum of seven times, there now may be just four gradation levels, such that the laser may have to pass over each line a maximum of just three times. In other words, Morishima in paragraph [0210] is not concerned with reducing the number of tracks on which information is written, but rather is concerned with reducing the number of times the laser has to pass over each track when writing on that track. Therefore, it should be clear that Morishima in paragraph [0210] does not anticipate the aspect of the claimed invention that information is formatted to be written on the least number of tracks.

Claims 19-22

Claim 19 is an independent claim, from which claims 20-22 depend. Claims 19-21 have been rejected under 35 USC 103(a) as being unpatentable over Morishima in view of Pettigrew. Claim 22 has been objected to as containing allowable subject matter, but as depending from a rejected base claim.

Claim 19 has been amended so that the information is formatted so that it is optically written "on a least number of tracks." Therefore, claim 19 is similar to claim 1 in this regard, such that it is patentable for at least the same reasons that claim 1 is. Claims 20-22 are patentable at least because they depend from an allowable base claim.

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Claims 23-26

Claim 23 is an independent claim, from which claims 24-26 depend. Claims 23-26 have been rejected under 35 USC 102(e) as being anticipated by Morishima. Claim 23 has been amended so that information is formatted so that it is optically written "on a least number of tracks." Therefore, claim 23 is similar to claim 1 in this regard, such that it is patentable for at least the same reasons that claim 1 is. Claims 24-26 are patentable at least because they depend from an allowable base claim.

Claim 27

Claim 27 is an independent claim, and has been rejected under 35 USC 102(e) as being anticipated by Morishima. Claim 27 has been amended so that information is formatted so that it is optically written "to a least number of tracks." Therefore, claim 27 is similar to claim 1 in this regard, such that it is patentable for at least the same reasons that claim 1 is.

Claims 28-30

Claim 28 is an independent claim, from which claims 29-30 depend. Claims 28-29 have been rejected under 35 USC 102(e) as being anticipated by Morishima. Claim 30 has been rejected under 35 USC 103(a) as being unpatentable over Morishima in view of Pettigrew. Claim 28 as originally presented is limited to information being formatted so that it is optically written "on a least number of tracks," and thus is similar to claim 1 in this regard. Therefore, claim 28 is patentable for at least the same reasons that claim 1 is, and claims 29-30 are patentable at least because they depend from an allowable base claim.

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Claims 31-33

Claim 31 is an independent claim, from which claims 32-33 depend. Claims 31-32 have been rejected under 35 USC 102(e) as being anticipated by Morishima. Claim 33 has been rejected under 35 USC 103(a) as being unpatentable over Morishima in view of Pettigrew. Claim 31 as originally presented is limited to information being formatted so that it is optically written "on a least number of tracks," and thus is similar to claim 1 in this regard. Therefore, claim 31 is patentable for at least the same reasons that claim 1 is, and claims 32-33 are patentable at least because they depend from an allowable base claim.

Claim 34

Claim 34 is an independent claim, and has been rejected under 35 USC 102(e) as being anticipated by Morishima. Claim 34 as originally presented is limited to information being formatted so that it is optically written "on a least number of tracks." Therefore, claim 34 is similar to claim 1 in this regard, such that it is patentable for at least the same reasons that claim 1 is.

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Conclusion

Applicants have made a diligent effort to place the pending claims in condition for allowance, and request that they so be allowed. However, should there remain unresolved issues that require adverse action, it is respectfully requested that the Examiner telephone Mike Dryja, Applicants' Attorney, at 425-427-5094, so that such issues may be resolved as expeditiously as possible. For these reasons, this application is now considered to be in condition for allowance and such action is earnestly solicited.

Respectfully Submitted,



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